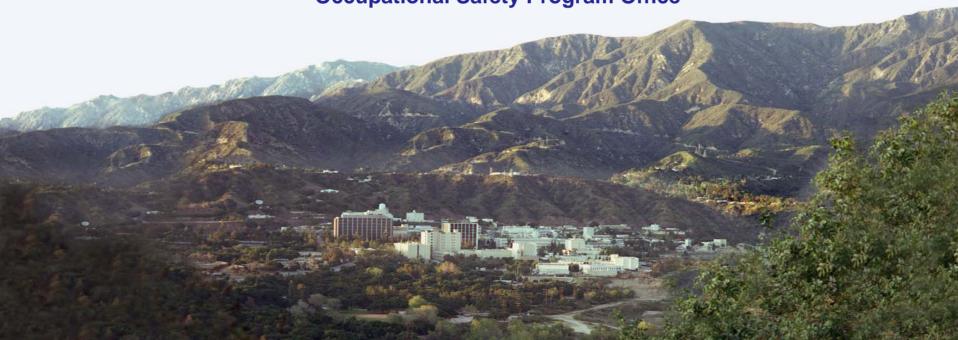


### NASA 2007 ANNUAL HEALTH AND SAFETY DIRECTORS' MEETING FEBRUARY 27 – MARCH 1, 2007

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Occupational Safety Program Office





### **Agenda**

- Human Factors Engineering
  - Definition & Documents
  - Applications
  - Interfaces
  - Support Activities
  - Value
  - Major Challenges
  - Program Improvements





#### **Definition:**

- <u>Human Factors</u> is a multi-disciplinary effort to acquire knowledge about people at work and apply that knowledge to the functional relationships between people, tasks, technologies, and environment for safe and efficient human performance.
  - Examples:
    - Ergonomics
    - Indoor air quality (IAQ)
    - Fatigue/stress
    - RF (associated with media)
    - Noise
    - Lighting
    - Physical and emotional well-being of program/project operations and science teams

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### – Applicable Documents:

- California Code of Regulations, Title 8, Section 3203, Injury and Illness Prevention Program Requires identification and corrective action for all potential hazards.
- NPR 1800.1B, NASA Occupational Health Program Procedures, Chapter 4, Section 4.8, Balancing Work-Rest Cycles. Requires identification of and procedures to ensure safe and healthful working conditions for employees working critical positions of 60 hours or more per week.

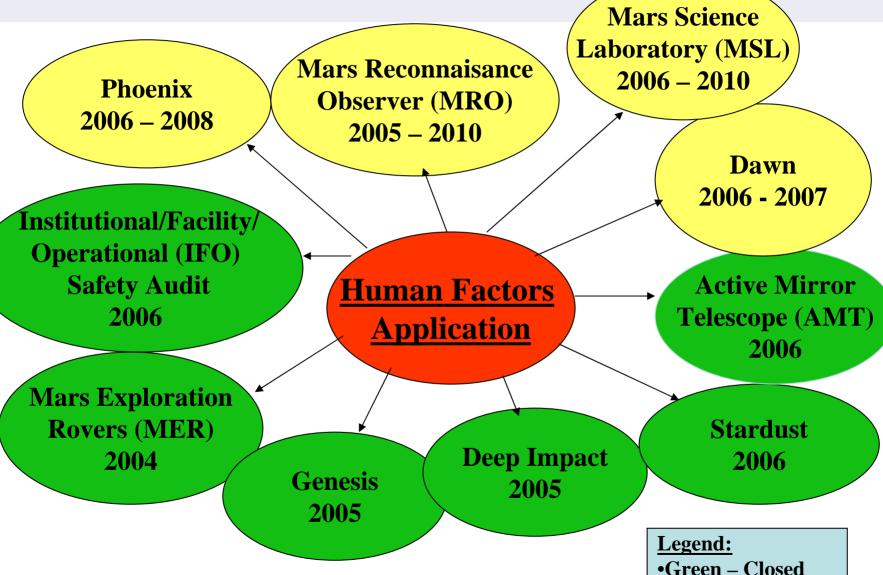


• JPL RULES! DocID #6722, Human Factors Health and Safety Requirements – Requires project, program, or line managers to develop Human Factors Plans to address procedures to ensure the safety and health of their employees, if they have employees that work 60 or more hours per week.



NASA 2007 Annual Health and Safety

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#### **Value of Human Factors Engineering**

#### **Educate Employees to:**

- Reduce transfer of colds/flu
- Understand & reduce fatigue/stress
  - Request transportation to residences/nearby hotels to avoid traffic incidents
- Eat healthy & drink sufficient liquids
  - Use cots/hotels for sleep/rest
  - Plan personal needs prior to extended work hours (e.g., meds, IRS preparation)

#### **Overall Benefits:**

- Reduce/eliminate injuries, illnesses, and/or property damage, including down time
  - Meet mission goals/objectives
  - Maintain healthy workforce
    - Maintain safe & healthful work environment
- Apply lessons learned to future tasks to improve process

#### **Educate Employees' Families:**

- Understand employee fatigue and stress
  - Maintain family ties with employee



#### **Major Challenges**

#### **JPL Personnel:**

- Securing personnel hours worked each week when 60 or more hours per week.
- Scheduling safety/health training time with employees.
- Convincing dedicated employees to take rest breaks/ sleep time.
- Convincing employees to stay home when ill.
- Assisting employees cope with mission failure.

#### **Contractors:**

- Securing contractor employees' reports of hours worked each week when 60 or more hours per week.
- Ensuring contract language requires contractor reporting employee hours worked when 60 or more hours per week.
- Ensuring contractors adhere to JPL occupational safety and health requirements in the mission Safety Plan.



#### **Program Improvements**

- (1) JPL Occupational Safety Program Office currently working with JPL Acquisitions for modification of contract language for new contracts to include reporting weekly to JPL, the employees that work 60 or more hours per week.
  - (2) Ensuring application of lessons learned from previous activities to new activities. Examples are cleaning with alcohol the telephones and computer keyboards between shifts to reduce transmittal of virus/bacteria during flu/cold season.
    - (3) Establishing pre-meetings with mission management and contractors to ensure awareness and application of JPL's safety and health requirements.